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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR          | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-------------------------------|---------------------|------------------|
| 10/031,813  | 05/28/2002  | Nigel Jeffrie Ricketts        | RR-491 PCT/US       | 3822             |
| 7590 10/15/2004   |             |                               |                     |                  |
| Rodman & Rodman<br>7 South Broadway<br>White Plains, NY 10601 |             | EXAMINER<br>ANDREWS, MELVYN J |                     |                  |
|   |             | ART UNIT PAPER NUMBER         |                     |                  |
|   |             | 1742                          |                     |                  |
| DATE MAILED: 10/15/2004                                       |             |                               |                     |                  |

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

10/031,813

Applicant(s)

RICKETTS ET AL.

Examiner

Melvyn J. Andrews

Art Unit

1742

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 06 July 2004 and 23 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 2-12, 33, 34, 39-41, 43-46 and 49-51 is/are pending in the application.
- 4a) Of the above claim(s) 34, 39-41, 43-46 and 49-51 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 2-12 and 33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 11/034/0440/18&2404.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Election/Restrictions*

The restriction is modified in view of applicants' amendment of July 23, 2004

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group I, claim(s) 2-12 and 33, drawn to a cover gas composition.

Group II, claim(s) 34, 39-41, 43-46, 49,50 and 51-51, drawn to a method of protecting molten magnesium.

The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: The inventions listed as Groups I and II do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: Claim 5 is obvious in view of Dougherty, Jr et al (US 5,115,868) , which discloses a fire extinguishing composition including a fluorine containing gas (col. 2, line 65 to col. 3, line 33) in view of which the claimed cover gas composition is obvious accordingly the special technical features linking the two groups does not provide a contribution over the prior art and no single inventive concept exists.

Applicants' remarks of July 6, 2004 are not persuasive of error since they appear to be related to a negative limitation "*non-trifluoromethane-containing*" which was deleted.

Applicants' remarks of July 23, 2004 are not persuasive of error because the claimed invention does not exclude "*trifluoromethane*" as argued since the transitional phrase "including" is inclusive or open-ended and does not exclude additional unrecited

elements MPEP 2111.03. Therefore the claimed cover gas is not patently distinct from Dougherty et al.

Claims 34, 39-41, 43-46 and 49-51 withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the replies filed on July 6, 2004 and July 23, 2004.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 2-12 and 33 are rejected under 35 U.S.C. 102(b) as being anticipated by Ricketts et al (US 6,167,944). Ricketts et al discloses an atmosphere of a gas comprising nitrogen (col.10, lines 37 to 51) which anticipates Claims 5 and 10 because the claimed cover gas composition is claimed as "a composition including up to less than 1% by volume of a fluorine containing inhibiting agent" the lower limit of the claimed composition reads on zero. Therefore only a carrier gas such as nitrogen, as in Claim 3, need be present.

***Claim Rejections - 35 USC § 103***

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 2-12 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT publication WO 96/22129. The PCT publication discloses compounds suitable for processes for controlling or extinguishing fires ( Page 7, lines 21 to last line, page 12, lines 21-23 and page 14, lines 2-7) it would have been obvious to one of ordinary skill in the art to select a compound with a low GWP since GWP is a result effective variable *In re Boesch*, 205 USPQ 215.

***Response to Arguments***

Applicant's arguments filed July 6, 2004 and July 23, 2004 have been fully considered but they are not persuasive.

Applicants argue that in publication '129 there is no disclosure of a "non-trifluoromethane containing cover gas" but Claims 5 and 10 do not claim a "non-trifluoromethane containing cover gas"

Applicants arguments that a cover gas cannot be used for both fire extinguishing and protecting molten aluminum is not well taken since applicants admit that both uses are appropriate as in the original claims.

Applicants' argument about the cover gas compositions containing a minimal amount of inhibiting is not well taken since the expression "up to less than 1 % by volume of a fluorine containing inhibiting agent" reads on zero therefore no inhibiting agent need be present.

Claims 2-12 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dougherty Jr et al (US 5,115, 868). Dougherty Jr et al discloses compositions for extinguishin, preventing or controlling fires (col.2, line 65 to col.3, line 33, col.4, line 31 to 38 and Examples 1 and 5) which include difluoromethane (HFC-32) , heptafluoropropane (HFC ea), 1,1,1,2 tetrafluoroethane (HFC-134a) and Dougherty Jr et al discloses that GWP is a result effective variable (Example 4) it would have been obvious to one of ordinary skill in the art to select a compound with a low GWP since the GWP is a result effective variable *In re Boesch*, 205 USPQ 215.

### ***Response to Arguments***

Applicant's arguments filed July 6, 2004 and July 23, 2004 have been fully considered but they are not persuasive.

Applicants argue that Claims 5 and 10 "inherently exclude *trifluoromethane*" is not well taken because the claimed Cover gas composition ... including " is inclusive and does not exclude additional unrecited elements see MPEP 2111.03

Applicants arguments that a cover gas cannot be used for both fire extinguishing and protecting molten aluminum is not well taken since applicants admit that both uses are appropriate as in the original claims.

Claims 2-12 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT publication WO 91/02564. The PCT publication discloses fluorinated hydrofluorocarbons such as pentafluorethane (page 4, lines 1 to 20) it would have been

obvious to one of ordinary skill in the art to select a compound with a low GWP since GWP is a result effective variable *In re Boesch*, 205 USPQ 215.

### ***Response to Arguments***

Applicant's arguments filed July 6, 2004 and July 23, 2004 have been fully considered but they are not persuasive.

Applicants claims do not recite "non-trifluoromethane"

Applicants argue that the '564 publication contains 240% greater than the fluorine containing inhibiting agents as claimed is not persuasive or error because the claimed cover gas composition does not exclude a large amount of a fluorine containing inhibiting agent as evidenced by the expression "cover gas composition... including" is inclusive and does not exclude additional unrecited elements see MPEP 2111.03

Applicants' argue that the '564 publication does not disclose the "expression adapted for the protection of molten magnesium/magnesium alloy" but the '564 publication is use to extinguish a fire which may occur when treating molten magnesium but no evidence has been provided to confirm applicants opinion.

Claims 2-12 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over PCT publication WO 96/22129, Dougherty Jr et al (US 5,115, 868) and PCT publication WO 91/02564 as applied to claims 5 and 10 above, and further in view of Ricketts et al (US 6,167,944). The PCT publications and the patent to Dougherty et al do not explicitly disclose a cover gas for molten magnesium but Ricketts et al discloses

a casting magnesium ingots using protective cover gas using dilute SF<sub>6</sub> / dry air gas mixture but not the claimed fluoride inhibiting agents with low GWP but these are disclosed by the '129 publication, Dougherty Jr et al and the '944 publication, it would have been obvious to one of ordinary skill in the art to select a compound with a low GWP since GWP is a result effective variable *In re Boesch*, 205 USPQ 215.

### ***Response to Arguments***

Applicant's arguments filed July 6, 2004 and July 23, 2004 have been fully considered but they are not persuasive.

Ricketts et al discloses a method of casting magnesium or magnesium alloy while maintaining an atmosphere of gas comprising, for example, dilute sulfur hexafluoride /dry air mixtures (col.10, lines 37-51) it would have been obvious to one of ordinary skill in the art at the time the invention was made to expect that fluorocarbons would function as a cover gas and as a fire extinguisher as evidenced by applicants' original claims.

Claims 2-12 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reimers (US 1,972,317) alone or in view of PCT publication WO 96/22129, Dougherty Jr et al (US 5,115, 868) and PCT publication WO 91/02564 .

Reimers discloses a method for inhibiting the oxidation of molten magnesium, by maintaining the atmosphere in contact with the exposed surface thereof of an oxidation inhibiting agent containing fluorine either in elemental form or combined form. The protective gaseous mixture containing fluorine with a diluent gas, such as air (col.2, lines



Art Unit: 1742

91-100). Reimers discloses combinations of fluorine with one, two, or three and four elements (col.3, lines 4 to 15) which suggests the claimed cover gas composition which need not contain any "inhibiting agent". Nevertheless it would have been obvious to one of ordinary skill in the art at the time the invention was made to use the specific fluorine compounds disclosed by PCT publication WO 96/22129, Dougherty Jr et al (US 5,115, 868) or PCT publication WO 91/02564 to form the Reimers mixture since the prevention of oxidation either as a fire extinguisher or as a oxidation inhibiting agent is the objective in all cases.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melvyn J. Andrews whose telephone number is (571)272-1239. The examiner can normally be reached on 8:00A.M. to 4:30 P.M..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V King can be reached on (571)272-1244. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1742

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MJA  
October 8, 2004

*Melvyn Andrews*  
MELVYN ANDREWS  
PRIMARY EXAMINER